



(57) **Abstract:** A process for liquefying a flow of natural gas with simultaneous recovery of a C_3/C_4 -rich fraction is described, whereby the liquefaction of the flow of natural gas is carried out in heat exchange for at least one refrigerant and/or mixed refrigerant flow, and the flow of natural gas that is to be liquefied, after precooling, is subjected to a rectifying column, in which higher hydrocarbons are separated from the flow of natural gas, and then is subjected to further cooling and liquefaction, whereby a C_{2+} -rich fraction that is recovered in the subsequent cooling of the flow of natural gas is fed to the rectifying column as a reflux liquid. According to the invention, a C_4/C_5 -rich fraction (20, 35) is fed directly and/or indirectly to rectifying column (T1) as an additional reflux liquid, whereby the feed point of the C_4/C_5 -rich [fraction (20, 35) is located at the top of rectifying column (T1) or is identical to the feed point of the C_{2+} -rich fraction (5).]

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